

placed in a deep glass vessel filled with water, and set where there would be plenty of light and warmth, but to the exclusion of all insects naturally visiting such blossoms. After a few hours a jar was placed upon a table and the flowers inspected for sensitiveness. A large bull's-eye condenser was adjusted upon its tall stand so that a head of flowers came into full view. Then, with the eye intent upon the particular blossom, the various floral parts were touched with the point of a needle.

By this method the first reward was *Echinacea angustifolia*. In this the whole flower, when touched upon one side, will move in a direction opposite to that of the irritant; that is, if pushed by the needle upon the south side, the top of the flower will move south, and through a distance averaging its own diameter. At the same time there is a contraction or drawing down of the ring of anthers equal to one-half of the diameter. This motion takes place quickly and leaves the lemon-colored pollen exposed upon the tip of the style, which may already extend somewhat above the anther-ring. Unusually good results are obtained with flowers which as yet show no portion of the style. In such the ring will contract and show the first pollen in profusion upon the extremity of the style. After an hour or so the flower again becomes irritable, and the anthers will retreat farther, leaving a fresh supply of pollen exposed upon a lower section of the style. The contraction is such that in many instances there is a revolving motion to the flower, as has often been seen in the thistle. In the *Echinacea* there are none of the peculiar hairs exhibited by the thistle filament, the surface being smooth throughout.

The observations which have been stated for the *Echinacea* hold true in a general way for *Heliopsis lævis*, although there are minor differences not worthy our present attention.

A third species to be added to the list of sensitive flowers is *Lepachys pinnata*, and a fourth is *Rudbeckia hirta*.

With a good triplet and upon a bright hot day fair results may sometimes be obtained in the field, but as insects are usually abundant the laboratory method is much more satisfactory. The writer would be pleased to learn what other *Compositæ* have been found in this country illustrating sensitiveness of the stamens.—BYRON D. HALSTED, *Rutgers College, New Brunswick N. J.* [Mr. Thomas Meehan has investigated this matter at considerable length, but ascribes the movements to elasticity and not sensitiveness. See abstract of his paper in Proc. A. A. A. S., Phila. meeting, papers in Proc. Phila. Acad., and various abstracts and notes in this journal.—EDS.]

Peronospora upon cucumbers.—On May 8th, while taking a run through the greenhouses and grounds of Mr. J. T. Hill here in New Brunswick, my attention was attracted by the numerous light patches upon the leaves of some cucumber vines which were growing in a hot-bed and already bearing fruit suitable for the table. Upon examining these spots they were found to be due to a growth of some species of the genus *Per-*

onospora. From the fact that *Peronospora australis* Spegaz. grows upon *Sicyos angulatus*, another member of the cucumber family of plants, one naturally turned to that as given in Ellis' N. A. F. No. 1416 for comparison and verification. The conidiophores and conidia are surprisingly different from the *Sicyos* species, and the patches of mildew as a natural consequence have a different aspect. Attempts have been made to germinate the conidia, but as yet without success. The oospores have not been met with.

This note is introduced here that students of this destructive group may be upon the watch for the cucumber mildew and its present range determined. From the nature of the fungus, and the plant upon which it is found, it is to be feared that market gardeners may have in the cucumber mildew a serious enemy, especially should it spread to squashes, melons and other members of the Cucurbitaceæ, and attack the seedling plants.—BYRON D. HALSTED, *Rutgers College, New Brunswick, N. J.*

Lactuca Scariola L.—I first noticed this plant in the summer of 1885 in the corner of an abandoned vegetable garden, and in the adjacent street, near my home on 71st street. It has since spread along the street for a couple of blocks, and is well established. I have not seen it elsewhere in the vicinity of Chicago.—E. J. HILL, *Englewood, Ill.*

Aster ptarmicoides, var. **lutescens** Gray.—In the BOTANICAL GAZETTE for 1883 (Vol. VIII, p. 238), an article by me appeared entitled "Aster or Solidago." It was based on a study of some plants found at Englewood nearly like *A. ptarmicoides*, but with pale yellow flowers. The question was raised whether it might not be a hybrid. This supposition proved to be wrong, for, specimens being sent subsequently to Dr. Gray, he identified it as given above, and it was thus published in the "Synoptical Flora." The article closed with the statement that the plant might throw some light on the *Aster lutescens* of "Torrey and Gray's Flora of North America," which Douglas collected in British America, near the Assiniboine river, as it seemed quite near that species. This conjecture, it seems, turned out to be true.

But the habitat here is at a great distance from that, and I do not learn that it has been found elsewhere in the United States. Macoun (Catalogue of Canadian Plants), under *A. lutescens* Torr. & Gray, states that it grows by the Assiniboine river, on the authority of Douglas, and on his own authority says: "west of the Touchwood Hills, 1872, not detected since." Gray, in the "Synoptical Flora," says, "Red river." But the Assiniboine and Red rivers unite in Manitoba a little before flowing into Winnepeg Lake, so that the region is essentially the same. The Touchwood hills are about 500 miles farther west, near the upper waters of the Assiniboine. I find no mention of its occurrence in other places. In his "Catalogue of the Flora of Minnesota" (1884), Warren Upham, referring to its presence in Northern Illinois, says: "it will probably be found in Minnesota."